

REMARKS

This responds to the Office Action mailed on August 2, 2006.

Claims 1, 8 and 9 have been amended. No claims have been cancelled. Claims 25-26 have been added. Claims 1-12 and 14-26 are now pending in this application.

Claims 15-23 were previously withdrawn as being drawn to a restricted method claim set. In the current Action, claim 24 has also been listed as withdrawn. However, claim 24 depends from claim 9, an elected apparatus claim. Therefore, Applicants respectfully request that claim 24 be considered.

Claim Amendments and Additions

The amendments and additions to the claims are fully supported by the specification as originally filed, and no new matter will be added by entry of the amendment. The amendments and additions to the claims are made to satisfy Applicants' preferences, not necessarily to satisfy any legal requirement(s) of the patent laws. The amendments clarify the claims and are not intended to limit the scope of equivalents to which any claim element may be entitled. Applicants respectfully request reconsideration of the above-identified application in view of the amendments above and the remarks that follow.

Claims 25 and 26 have been added. Support for these claims may be found at claims 3 and 4, for example.

Independent claims 1 and 9 have been amended to now include: "wherein the substrate does not include a fluid channel in fluid communication with the fluid channel of the interposer." Support may be found at least at the drawing figures, and in particular, at reference numerals 116, 216 and 316.

Claim 8 has been rewritten into independent format to incorporate elements of claims from which claim 8 previously depended, including claim 1 and claim 7. Further, claim 8 incorporates elements from original claim 2.

Objection to the Drawings

The drawings are objected to under 37 CFR 1.83(a). In particular, the Action states that the embodiment having two fluid channels according to claim 14 must be shown. References

numerals 311a and 311b of FIG. 3A designate the two fluid channels of claim 14. Accordingly, Applicants respectfully request that this objection be withdrawn.

§102 Rejection of the Claims

Claims 1-12 and 14 were rejected under 35 USC § 102(b) as being anticipated by Lee et al. (U.S. 6,756,251 B2). This rejection is respectfully traversed.

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claims, arranged as in the claim. 35 U.S.C.A. § 102(b), Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick Co., 730 F.2d 1452, C.A.Fed.,1984.

Independent claims 1 and 9 have been amended to include: “wherein the substrate does *not* include a fluid channel in fluid communication with the fluid channel of the interposer.” (emphasis added).

Because Lee (at least at FIGs. 15 to 17) discloses the first substrate 110 having a fluid channel in fluid communication with a fluid channel of the second substrate 40, Lee simply does not disclose each and every element of independent claims 1 and 9.

Applicants respectfully submit that Lee, therefore, does not anticipate these claims. Accordingly, independent claims 1 and 9 are patentable over Lee, and Applicants respectfully request that the rejection with regard to these claims and their dependents be withdrawn.

Claim 8 has been rewritten into independent claim format, incorporating each of the claims from which claim 8 depended, as well as incorporating elements from claim 2.

Claim 8 recites: “wherein the at least two fluid channels in the interposer includes a vent hole within the die shadow region and a microchannel that lies outside of the die shadow region.”

Firstly, Lee does not disclose a “vent hole within the die shadow region.” At col. 6, lines 12-15, Lee states: “To enhance flow of underfill material 74 through the underfill aperture 60...” Lee does not disclose a “vent hole,” but rather discloses an aperture through which material is to flow. Because Lee does not disclose a ‘vent hole’, Lee does not disclose each and every element of claim 8.

Second, Lee does not disclose a “microchannel that lies outside of the die shadow region.”

Page 4 of the Current Action refers to FIGs. 13 and 17 of Lee to teach these elements. In particular, the Action states: “Since the shadow region is defined by one chip any other channel, covered by another chip or not, is considered outside the region.”

Referring to FIGs. 13 and 17, Lee simply does not disclose apertures outside a die shadow region. FIG. 13 of Lee actually discloses a stencil 80 with apertures 60. An outline of the support 40 is shown, however, there are no apertures 60 shown to be outside this outline. Further, there are no inferences within FIGs. 13 and 17 to suggest that there may be apertures of the stencil 80 outside the die shadow region but within the outline of the support 40. Referring to FIG. 17 of Lee, it is plain to see that support 40 includes an aperture within what might be referred to as the die shadow region.

Because Lee does not disclose a “microchannel that lies outside of the die shadow region,” Lee simply does not disclose each and every element of independent claim 8.

Claims 2-7, 10-12, 14 and 24-26 depend from independent claim 1, 8 or 9, and incorporate all of the limitations therein, respectively. Claims 2-7, 10-12, 14 and 24-26 are also asserted to be allowable for the reasons presented above, and Applicants respectfully request notification of same.

Applicants consider additional elements of claims 3 and 25 to further distinguish over Lee, as applied in the Action. For example, dependent claims 3 and 25 recite a “vent hole” to facilitate “capillary flow of underfill mixture dispensed between the interposer and the substrate.” Again, Lee does not disclose a “vent hole,” but rather discloses an aperture through which material is to flow. Because Lee does not disclose a ‘vent hole’, Lee does not disclose each and every element of claims 3 and 25.

Applicants consider additional elements of claims 2, 4-7, 10-12, 14 and 24, 26 to further distinguish over Lee, as applied in the Action, and Applicants reserve the right to present arguments to this effect at a later date.

Applicants believe the proposed new and amended claims are patentable, and that the amendments and additions made herein are within the scope of a search properly conducted under the provisions of MPEP 904.02.

Conclusion


Applicants respectfully submit that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicants' attorney in Gainesville, Florida ((352) 373-8804) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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